

REMARKS

Upon entry of the present amendment, claims 1-20 will have been canceled without prejudice or disclaimer of the subject matter thereof. Additionally, new claims 21-30 will have been submitted for consideration by the Examiner.

In view of the herein contained amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections together with an indication of the allowability of all the claims pending in the present application. Such action is respectfully requested and is now believed to be appropriate and proper.

In the outstanding Official Action, the Examiner rejected claims 1-16 under 35 U.S.C. § 102(e) as being anticipated by OZAWA (U.S. Patent No. 5,826,226). Claims 17-20 were rejected under 35 U.S.C. § 103 as unpatentable over OZAWA in view of TZENG (U.S. Patent No. 5,293,449).

Applicants respectfully traverse each of the above rejections as applied by the Examiner, both with respect to claims 1-20 previously pending herein as well as with respect to claims 21-30 presently pending herein. In this regard, Applicants note that the changes to the claim language introduced by the cancellation of claims 1-20 and the presentation of claims 21-30 for examination in the present application are not made in view of the prior art, nor are these claims the result of narrowing amendments. Rather, the newly presented claims are being submitted merely in order to clarify the claim language and to enhance the basis for patentability of the claims in the present application which, as noted in the previous Response, are clearly patentable over the references of record in the present application.

Applicants further wish to make of record a telephone interview conducted between Applicants undersigned representative and Examiner Opsasnick who is in charge of the present application. During the above-noted interview, which was conducted on March 21, 2005, Applicants set out the distinguishing features of the present invention and of the claims pending herein, and compared the same with respect to the disclosure of the primary OZAWA reference applied thereagainst.

During the above-noted interview, the Examiner indicated that he understood Applicants position and the distinctions between the OZAWA reference and the claims pending in the present application. However, the Examiner suggested that the recitations of the claims in the present application be clarified so as to more specifically emphasize the distinction between the claims pending and the disclosure of the cited reference.

In particular, during the above-noted interview, the Examiner requested that Applicants amend the claims by utilizing terminology similar to that contained in the claims of U.S. Patent Application No. 09/843,939. In essence, the Examiner requested that "the excitation vector is configured to be further convoluted with an impulse response of a synthesis filter to output synthesized speech" be included in the pending claims.

During the above-noted interview, Applicants representative discussed with the Examiner the possibility of an obviousness-type double patenting rejection if the Examiner's suggestion was adopted. The Examiner indicated that double patenting does not appear to be an issue based on the divergence in the claimed subject matter between the present application and the above-noted co-pending application. The

Examiner indicated that he would further consider this matter once the response was received.

Applicants respectfully thank the Examiner for his cooperation and for his assistance in scheduling and conducting the above-noted interview. Applicants further respectfully thank the Examiner for his helpful suggestions with respect to claim language for the present application.

At the conclusion of the interview, Applicants representative indicated that in view of the nature of the changes suggested by the Examiner, further review thereof would be necessary. The Examiner indicated that he understood and that he looked forward to receiving the Response to the outstanding Official Action.

As can be seen by a review of the newly submitted claims, while Applicants have not utilized the terminology suggested by the Examiner, Applicants have utilized language that complies with the spirit of the Examiner's suggestion. In other words, Applicants define, in the presently pending claims, a modified excitation vector which is provided as an input to a synthesis filter. Based on this recitation, it is respectfully submitted that the combination of recitations in the claims of the present application are clearly patentable over the references cited by the Examiner.

Applicants again submit that OZAWA does not contain a disclosure that is appropriate for the rejection of any of the claims in the present application. Applicants note the Examiner's assertion that OZAWA teaches a fixed waveform storage system capable of storing one or more fixed waveforms as coded storage information for the synthesis. Applicants respectfully traverse the Examiner's interpretation of the reference and submit that the Examiner's interpretation and understanding of the

reference and the application thereof to the claims of the pending application, both prior to the present amendment as well as subsequent to the present amendment are incorrect and inappropriate.

In particular, Applicants respectfully submit that the codebook of OZAWA is a pulse amplitude codebook. Thus, it does not contain one or more fixed waveforms. Rather, the codebook of OZAWA contains polarity information of plural pulses. On the other hand, the present invention, as recited in the claims, utilizes a fixed waveform that is convoluted with an input excitation vector to generate a modified excitation vector.

The Examiner further asserts that OZAWA teaches a convolution system capable of convoluting fixed waveforms with the input vector to output an excitation vector as a convolution calculation utilizing the codebook. Applicants additionally submit that the Examiner's interpretation of the OZAWA reference in this regard is also inappropriate and inaccurate.

The convolution of OZAWA relates to a speech synthesis filter. In CELP (Code Excited Linear Predictive Coding), an adaptive codebook search procedure which selects or determines a pitch period of the excitation signal is generally performed according to error values in the synthesized speech domain. Therefore, each candidate vector of the adaptive codebook is generally synthesized in the codebook search procedure. In other words, in the codebook search procedure, a candidate vector is convoluted with an impulse response of the synthesis filter.

In direct contrast, the convolution of the present invention is a process of generating a modified excitation vector which is utilized as an input to the synthesis filter. In particular, and as recited, inter alia, in claim 21, the present invention is

directed to a modified excitation vector generator comprising a vector providing system, a waveform providing system and a convolution system configured to convolute the fixed waveform with the input excitation vector to generate a modified excitation vector, wherein the modified excitation vector is provided as an input to the synthesis filter.

Furthermore, although the term "convolution" is used both in OZAWA and in the present application, the objects of the convolution are completely different. In particular, the excitation vector generated by the present invention, which is generated by the convolution between the input excitation vector and the fixed waveform, is further convoluted with an impulse response of the synthesis filter to obtain synthesized speech. However, in OZAWA, as noted above, a candidate vector is convoluted with the impulse response of the synthesis filter.

Accordingly, based on the above, both the operating objectives and the purposes of the convolutions of the present application and of the OZAWA disclosure are significantly different and thus OZAWA is an inappropriate basis for the rejection of the pending claims.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw each of the outstanding rejections and indicate the allowability of all the claims in the present application.

As noted above, during the above-noted interview, Applicants representative and the Examiner discussed the issue of judicial type double patenting with respect to the claims of the present application. However, in view of the newly submitted claims, it is respectfully submitted that a double patenting rejection would be inappropriate because of the significant differences between the claimed subject matter as recited in claims 21-

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30 and the claimed subject matter of U.S. Patent Application No. 09/843,939. Accordingly, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections and an indication of the allowability of all the claims pending in the present application, in due course. Such action is respectfully requested and is now believed to be appropriate and proper.

SUMMARY AND CONCLUSION

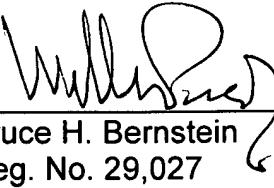
Applicants have made a sincere effort to place the present application in condition for allowance and believe that they have now done so. Applicants have canceled the existing claims and have submitted new claims for consideration. These claims have been prepared in view of the discussion and the Examiner's comments as expressed during an interview which is being made of record in the present Response.

Applicants have discussed the disclosure of the reference relied upon by the Examiner and have contrasted the same with the features of the present application. Applicants have pointed out the significant and substantial shortcomings of the applied reference with respect to the features of the pending claims. Applicants have also discussed the differences between the recitations of Applicants claims and the disclosure of the reference relied upon. Accordingly, Applicants have provided a clear evidentiary basis supporting the patentability of all the claims in the present application and respectfully request an indication to such effect in due course.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should the Examiner have any questions or comments regarding this Response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,  
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